

REMARKS

The Office Action mailed February 11, 2004 and the Advisory Action mailed April 28, 2004 has been carefully reviewed and the following remarks are made in consequence thereof.

Claims 1, and 3-20 are pending in this application. Claims 1-20 stand rejected. Claim 2 has been canceled.

Applicant wishes to thank Examiner for courtesies extended to the Applicant's representative during a telephonic interview conducted March 30, 2004. During the interview, the objection to the drawings and the section 112 rejection were discussed. Specifically, suggestions for illustrating the prior art in view of the requirement of adding no new matter was discussed.

The objection to the specification is respectfully traversed. The specification has been amended to add a brief description of the new drawings. Accordingly, Applicants respectfully request the objection to the specification be withdrawn.

The rejection of Claims 1-20 under 35 U.S.C. §112, second paragraph, is respectfully traversed.

Applicant respectfully submits that Claims 1, and 3-20 satisfy Section 112, second paragraph. More specifically, Applicant respectfully submits that Claims 1, and 3-20 distinctly claim the subject matter of the invention. However, to expedite prosecution, Applicant has amended the figures, specification, and claims as presented above.

Claim 1 has been amended to more clearly claim "generating a single equivalent profile curve and the elements of Claim 2 have been incorporated into Claim 1. Claim 2 has been canceled. References to "seed revolved edge" in the claims have been amended to recite "first revolved edge".

Claim 1 recites, "(c) identifying a first revolved edge;..."

As described in the specification at page 4, lines 6-20 and shown in Figure 2 at 120, the algorithm is executed to query the edges of a three-dimensional solid and identifies a circular edge that is a revolved edge. A circular edge that is aligned with respect to the three-

dimensional solid axis of rotation is considered a revolved edge. Such a circular edge is known as a seed revolved edge and is disposed on a seed face. Accordingly, the specification describes identifying a revolved edge, specifically a seed revolved edge, prior to identifying a revolved face.

Claim 1 recites, “(d) identifying a revolved face adjacent to the first revolved edge....”

Page 4, lines 23-26 of the specification and Figure 2 at 160 describe that the three-dimensional solid is then queried to identify a revolved face adjacent the current circular edge (the seed edge at the beginning of the sequence). The first revolved face is termed a seed face. If such a face is found, the face is queried and data from the face (i.e., torus radii, cone angle, etc.) is determined.

Claim 1 recites, “(e) identifying a second revolved edge adjacent the revolved face....”

Page 5, lines 2-5 of the specification and Figure 2 at 200 describe that a second edge adjacent to seed face is determined. The external set of edge curves for the face are then cycled 200 to locate a revolved edge, identified as E2, disposed at the furthest radial, identified as R2, and axial location, identified as Z2, from edge E1.

Claim 1 recites, “(f) determining an equivalent profile curve for the revolved face extending between the first revolved edge and the second revolved edge....”

Page 5, lines 6-12 of the specification and Figure 2 at 220 describes that a subroutine is then executed to create an equivalent face curve between points (R1, Z1) on the seed edge and (R2, Z2) on the second edge. The equivalent face curve is added to a string of profile curves previously generated. The string of curves are bounding and will eventually define the revolved profile. The algorithm is programmed to assume that every face has exactly two circular trimming edges which define the end points, i.e., a beginning and an end, of the equivalent curve.

Claim 1 recites, “(g) setting the first revolved edge equal to the second revolved edge....”

Page 5, lines 14-20 of the specification and Figure 2 at 240 describes that after the equivalent face curve is determined, the beginning of the next curve to be generated is set. To set the beginning of the next curve, the algorithm forces the beginning of the next curve to represent the end of the curve just created. Additionally, the current edge, E1, is also set to E2.

Claim 1 recites, “(h) performing steps (d) through (g) until the second revolved edge returns to the first revolved edge identified in step (c). . . .”

Page 5, lines 14-18 of the specification and Figure 2 at 240 describe that the sequence continues until all revolved faces have been identified and the respective equivalent face curves determined. The equivalent face curves are used to generate the two dimensional representation of the 3D solid. The computer executing algorithm 82 continues executing loop 152 until a determination 170 is reached based on the traced list that the three-dimensional solid includes no additional adjacent resolved faces. If no additional faces are found, the execution of loop 152 ceases.

Accordingly, the seed revolved edge is determined before the seed revolved face. The next revolved edge identified determines the outer extent of the seed face. From each subsequent revolved edge, a next revolved face is determined, until all revolved faces have been identified and respective equivalent face curves generated. As such, Applicants respectfully submit that sequence illustrated in Figure 2, and described on pages 4 and 5 of the specification are consistent with respect to each other, and provide support for the method recited in Claim 1. Accordingly, Applicants respectfully submit that Figure 2 is correct and illustrates the method recited in Claim 1 and described in the specification.

Furthermore, the description of Figure 5 at the top of page 3 in the Office Action response dated January 20, 2004 describes structural parts of an exemplary three-dimensional solid model and does not describe performing the method shown in Figure 2 of the specification. As such, the description of Figure 5 and does not conflict with the description of Figure 2 on page 4 of the specification because one describes a method and the other describes structure.

Accordingly, Applicant submits that Claim 1 satisfies the requirements of Section 112, second paragraph.

Claims 2-6 depend from independent Claim 1, and these dependent Claims are submitted to satisfy the requirements of Section 112 for the same reasons set forth above with respect to independent Claim 1.

Claim 7 has been amended to include similar recitations as recited in Claim 1. Accordingly, Applicant submits that Claim 7 satisfies the requirements of Section 112, second paragraph.

Claims 8-13 depend from independent Claim 7, and these dependent Claims are submitted to satisfy the requirements of Section 112 for the same reasons set forth above with respect to independent Claim 7.

Claim 14 has been amended to include similar recitations as recited in Claim 1. Accordingly, Applicant submits that Claim 14 satisfies the requirements of Section 112, second paragraph.

Claims 15-20 depend from independent Claim 14. When the recitations of Claims 15-20 are considered with the recitations of Claim 14, Applicant respectfully submits that Claims 15-20 also meet the requirements of Section 112, second paragraph.

For at least the reasons set forth above, Applicant respectfully requests that the Section 112, second paragraph, rejection of Claims 1-20 be withdrawn.

In view of the foregoing remarks, all the Claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully submitted,



William J. Zychlewicz , Reg. 51,366
ARMSTRONG TEASDALE
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070